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PATHOGENIC VARIATIONS OF *Colletotrichum* spp. CAUSING THE LEAF TWISTER DISEASE OF ONION

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The potential yield of red onion (shallot) grown in Sri Lanka is reduced significantly by the Leaf Twister Disease (LTD). The characteristic symptoms of the disease are leaf curling, twisting and yellowing and abnormal elongation of pseudostem followed by bulb rotting. According to previous investigations, *Colletotrichum gloeosporioides* and *Fusarium oxysporum* have been isolated from LTD-infected onion plants. *Colletotrichum* is a highly variable genus in terms of morphology and pathogenicity. Information on such variations is useful for identification and effective management of the pathogen. Therefore, the present study was conducted to determine the pathogenic variation of *Colletotrichum* spp. isolated from LTD-infected onions collected from the Puttalam district of Sri Lanka.

LTD-infected onion plants were collected from six locations of the Puttalam district and 14 morphologically-different *Colletotrichum* isolates were obtained. The pathogenicity of the 14 isolates was determined by a pot experiment using the red onion variety Vethalan. Aliquots of 10 ml spore suspensions of each isolate were inoculated to soil before the bulbs were planted in polythene bags. The control treatment was maintained by adding the same volume of sterilized distilled water in place of the spore suspension. The experiment was conducted according to a completely randomized design with five replicates. Disease severity was recorded as percentage of infected leaves and the number of days taken to show initial symptoms. The treatment effect (i.e. inoculation of *Colletotrichum* isolates) was determined by ANOVA and mean separation was done by LSD.

Out of the 14 isolates, PISO14, 15 and 18 had hyaline, oval-shaped spores similar to *C. gloeosporioides*. Fusiform spores were produced by the isolates PISO 02, 04, 06, 09 and 26 and the rest of the isolates had spindle-shaped spores. Disease severity in terms of infected leaf percentage and mean number of days taken to show symptoms was significantly different among isolates of *Colletotrichum* ($p<0.05$). Red onion infected with isolates PISO 14, 15 and 18, which were morphologically-similar to *C. gloeosporioides* showed the highest percentage of infected leaves. Isolates PISO 06, 08, 12 and 13 caused the lowest mean percentage of infected leaves. Except for isolate PISO 06, the other isolates which caused the highest mean percentage of infected leaves developed disease symptoms rapidly by taking the lowest number of days for symptom development. Hence, isolates PISO 14, 15 and 18 are highly virulent in terms of the rapidity and the extent of the symptoms that they develop.

The present study revealed that pathogenic variations in terms of disease severity exist among different isolates of *Colletotrichum* spp. infecting red onion in the Puttalam district of Sri Lanka.

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